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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/720,388 | 11/25/2003 | Hiroyuki Uwazumi | 32307-198189 | 4270 |
| 26694 | 7590 | 06/28/2004 | EXAMINER | |
| VENABLE, BAETJER, HOWARD AND CIVILETTI, LLP | | | FALASCO, LOUIS V | |
| P.O. BOX 34385 | | | ART UNIT | |
| WASHINGTON, DC 20043-9998 | | | PAPER NUMBER | |

1773

DATE MAILED: 06/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/720,388 | UWAZUMI ET AL. | |
| | Examiner | Art Unit | |
| | Louis Falasco | 1773 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-8 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-8 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 09/789,928.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/25/03</u> . | 6) <input type="checkbox"/> Other: _____ |

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This application is acknowledged as a Division of US 09/789928 now US Patent 6716542.

PAPERS RECEIVED

Applicants' Information Disclosure Statement of 11/25/03 is acknowledged.

Applicants' Preliminary Amendment received 01/28/04 is acknowledged.

CLAIMS

The claims are 5 to 8 and 10.

All claims are under consideration.

ACTIONS

Statutory Basis

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Rejections

1. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Howard et al** (US 5436047) taken with **Toshiya** (JA 2948019 - as cited in the instant specification, equivalent to applicants IDS published application JA 5-311413) in view of either **Thomas et al** (US 4675091) or **Mitsui** (US 6042752).

Howard teaches the process of these claims except the size of the particles used in the sputtering target. **Howard** teaches a method for producing a magnetic recording medium comprising a nonmagnetic undercoat on a substrate, a magnetic layer and a protective layer. The magnetic layer is formed by sputtering, where the target is composed of a metal and an oxide (see **Howard** Fig. 1 element and col. 3 lns 5-10). **Howard** does not teach the specific size of the metal and an oxide sputtering target of 10 μm or less. However **Toshiya** points out that the particle size of the metal and an oxide sputtering target as less than 20 μm (see Target E at *Detailed Description* paragraph [0023] of **Toshiya**) using a metal and oxide target such as Cr - Al_2O_3 or Ta- SiO encompassed by the instant claims. This particle size is preferred to prevent detrimental arcing during sputtering (see *Detailed Description* paragraph [0008] and [0024]). **Toshiya** by teaching the use of a particle size lower than 20 μm includes the claimed particle size of 10 μm or less and the 5 μm or less in claim 6. Furthermore it has been

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generally recognized in the sputtering art that a even smaller sputter target particle size will reduce arcing as evident from either **Thomas et al** (col. 3 ln 50 – col. 4 ln 5 and in the Example at col. 5 ln 23) or **Mitsui** (col. 5 lns 1- 10 and in Examples at col. 9 lns 9 and 10).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adopt the size of the metal and an oxide sputtering target particle size of 10 μm or less and 5 μm or less in the process for making a magnetic recording media of **Howard** given the **Toshiya** teaching the use of a metal and oxide target particle size lower than 20 μm sputtering target. **Toshiya** points out the smaller size particle lower than 20 μm prevents detrimental arcing in the process (**Toshiya** 'Effect of the Invention' paragraph [0027]). Moreover **Thomas et al** and **Mitsui** show that reducing the size of the particle in the sputter target minimizes current jumps that reduce bond and uniformity of the coating (**Thomas et al** col. 3 lns 12-14; **Mitsui** col. 1 lns 53, 54 and col. 2 lns 23, 24). One skilled in the art would have been motivated to adopt **Toshiya**, reducing the size of the particle size in the sputter target below 20 μm in the sputter process for producing a magnetic recording element of the primary reference, with the expectation of preventing arcing to form a more strongly bonded more uniform coating in view of the appreciation in the sputtering art. It has been demonstrated by **Thomas et al** and **Mitsui** that decreasing the target particle size results in decrease of detrimental arcing.

2. Claims 7, 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Howard et al** taken with **Toshiya** in view of either **Thomas et al** or **Mitsui** as applied to claims 5 and 6 above, and further in view of **Katsutake et al** (JA 08-255342) or **Yusu et al** (US 6174597).

Howard et al taken with **Toshiya** in view of either **Thomas et al** or **Mitsui** do not show sputter coating a for a magnetic recording medium having Co and Pt with the metal oxide. However sputter coated magnetic recording media containing Co and Pt with a metal oxide are well know constituents conventional in the magnetic recording art, as demonstrated by **Katsutake et al** or by **Yusu et al** (see **Katsutake et al** Co and Pt compositions including oxides shown on Table 1, translation the *Means* paragraph, the *Examples* paragraph [0034] and **Yusu et al** col. 4 lns 12-21, col. 5 lns 47- 56 Example 1A, 3A, 3B, 4A).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adopt the convention demonstrated by **Katsutake et al** or by **Yusu et al** of having magnetic recording media containing Co and Pt with the metal oxides of these claims in recording media such as **Howard et al** for the purpose of increasing the sensitivity and Signal-to-Noise ratio of the medium (**Katsutake et al** Detailed Description paragraph [0003], Example paragraph [0022] or **Yusu et al** col. 1 ln 19, 20, 45, 46). One skilled in the

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art would have been motivated to adopt **Katsutake et al** or **Yusu et al** with the expectation of increasing recording quality while decreasing the signal noise.

OTHER REFERENCES

All references from IDS have been considered.

CONCLUSION

The claims are 5 to 8 and 10.

All claims have been considered, no claim has been allowed in this action.

INQUIRES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Falasco whose telephone number is (571)272-1507. The examiner can normally be reached on M-F 10:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571)272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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6/04


STEVAN A. RESAN
PRIMARY EXAMINER